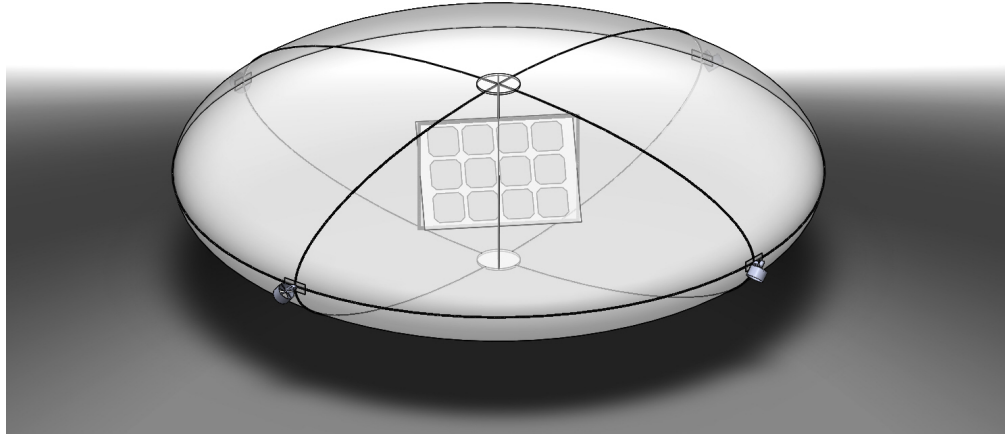


## Lenticular Solar Vehicle



Solar Airship is 5th year MEng Project in Mechanical Engineering at Heriot Watt University in Edinburgh.

In semester one, the group investigated a number of concepts, of which two were given particular attention for further analysis: Lenticular ("Smartie" shape) Solar Tracking Vehicle and Multiple Hull X-type Solar Tracking Vehicle. The main differences between concepts were whether the solar panel should be mounted inside or outside the envelope, whether the group should manufacture the envelope or buy it off-the-shelf, and between single-hull and multiple-hull design. Further tests on a simple prototype allowed for qualitative analysis of the latter of the two designs which, in addition to CFD analysis, enabled an informed decision to be made regarding the direction of the project. It was decided to use lenticular envelope and develop this type of design. The Lenticular Solar Vehicle is shown above.



Robotic airship of the disk-shaped ANYUTA PROJECT form DP-27

Dolgoprudny Automatics Design Bureau, Russia.

Outer jacket from the airholding fabric; inside: • the gas-holding cylinders; • 4 internal combustion engines; • system of radio control. The Raskroyny volume of cover is 520 m<sup>3</sup> Cladding diameter is 16000 mm Maximum speed of 70 km/h Maximum height of flight (above sea level) 1000 m Maximum flight range of 40 km Maximum useful target load of 100 kg Lifting gas helium / fleg. hydrogen Energy consumption of apparatus set of 1 kW Voltage onboard 27 V Ambient temperature -10... +30 °C Relative air humidity (at t = 35 °C) to 98% Speed of transportation of complex of 70 km/h